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Engineering Dept.,  
New York.

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METHOD OF OPERATION  
TELEPHONE CIRCUIT

Without Loud Speaking Circuit - Arranged For Transfer Key - Local Test Desk -  
Full Mechanical Power Driven System.

GENERAL DESCRIPTION

1. This telephone circuit is used to provide means of communication between trunk lines, loud speaking circuit, primary and secondary test circuits, and a local test desk. The circuit is provided with a dial for originating calls on lines associated with line switches or line finders. The circuit is also provided with a means for tripping machine ringing current on incoming calls without causing objectionable clicks in the telephone receiver.

DETAILED DESCRIPTION

2. On incoming calls to the local test desk through either a mechanical or manual trunk, machine ringing current applied over the trunk operates TP relay in series with the 54-A retardation coil. The TP relay operated, operates the TP-1 relay. The TP-1 relay operated, closes a circuit from battery on its armature, winding the TP-2 relay, to ground on the armature of the TP relay, operating the TP-2 relay. The TP-2 relay operated locks to ground on the armature of the TP relay. The TP-1 relay is made slow to release in order to hold the operating circuit of the TP-2 relay until its locking circuit is completed. The slow release feature of the TP-1 relay insures the operation of the tripping relay in the associated trunk before the tip and ring are closed through to the telephone set, by the operation of the T relay. The release of the TP-1 relay closes a circuit through the make contact of the TP-2 relay, winding of the T relay to ground on the armature of the TP relay operating the T relay. The T relay operated, connects the tip and ring terminals of the trunk, to the telephone set. When the T and R terminals of this circuit are released by the final selector, on calls originating in a full mechanical office, or, when the plug of the calling cord is removed from the jack associated with this circuit on calls from a manual office, the TP relay releases. The TP relay released, in turn releases the TP-2 and T relays, restoring the circuit to normal.

3. When this circuit is used with either the primary and secondary testing circuits, or with a test line, ground is supplied over either the F or S leads operating the M relay. The M relay operated, disconnects the operator's receiver from the 478 ohm winding of the 24 type induction coil and connects it through the make contacts of the M relay to the 23 ohm winding of the 27-F repeating coil. When ground is removed from the F or S lead, the M relay releases, restoring the circuit to normal.

4. On outgoing full mechanical calls, the D relay operates during the dialing period through the off-normal contacts of the 2-D dial. The D relay operated, short circuits the tip and ring leads thus preventing clicks in the receiver from the dialing impulses.

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CIRCUIT REQUIREMENTS

OPERATE

NON-OPERATE

RELEASE

B75 Test .0057 amp.  
(TP) Readj. .005 amp.

E34 Test .030 amp.  
(T,M) Readj. .020 amp.

E214 Test .028 amp.  
(TP-2) Readj. .015 amp.

E221 Test .016 amp.  
(TP-1) Readj. .015 amp.

E671 Test .059 amp.  
(D) Readj. .017 amp.

Test .015 amp.  
Readj. .016 amp.

Test .009 amp.  
Readj. .010 amp.

Test .011 amp.  
Readj. .012 amp.

Test .0016 amp.  
Readj. .0025 amp.

Test .0020 amp.  
Readj. .0022 amp.

ENG.-TML-JO.  
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CHK'D.--RAP-CWP.

APPROVED - C. L. SLUYTER, G.M.L.